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COMPLETE REGULATION PACKAGE

FOR THE

CLEAN AIR MERCURY RULE (CAMR) STATE PLAN

OCTOBER 2006

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A. INTRODUCTION

On May 18, 2005, under section 111 of the Clean Air Act Amendments (CAAA) of 1990, 42 USC § 7411, the United States Environmental Protection Agency (EPA) published in the Federal Register "Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units." This action is referred to as the "Clean Air Mercury Rule" (CAMR) and amends *Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978* (40 Code of Federal Regulations (CFR) Part 60, Subpart Da) and establishes *Emission Guidelines and Compliance Times for Coal-Fired Electric Steam Generating Units* (40 CFR Part 60, Subpart HHHH).[1] Electric Generating Units (EGUs) subject to CAMR combust coal and are referred to as "Hg Budget units."

There are eight existing Hg Budget units in the Commonwealth of Massachusetts (namely, Brayton Point units 1 to 3, Salem Harbor units 1 to 3, Mt. Tom unit 1 and NRG Somerset unit 8) that are subject to the Emission Guidelines and will be regulated under the State Plan being proposed herein.

This public hearing package contains the Massachusetts Department of Environmental Protection's (MassDEP's) draft CAMR State Plan in response to the CAAA requirements, along with a Background Document and proposed amendments to the Massachusetts Air Pollution Control Regulations. At this time, MassDEP solicits comments only on the specific amendments put forth in this proposal, and their use to meet the State Plan requirements of CAMR. This public hearing package is divided into four sections:

A. This Introduction

B. The State Plan – EPA has detailed the information required to be in the State Plan at 40 CFR Part 60, Subpart B. The requirements of the State Plan are as follows:

1. A record of the public hearings on the State Plan, including hearings held prior to this proposal, and hearings to be held, as required by 40 CFR 60.24(f).

2. A demonstration that the emission standards and compliance schedules will result in compliance with the State's annual electrical generating unit (EGU) mercury (Hg) budget for the appropriate periods, as required by 40 CFR 60.24(h)(3).

3. Requirements for monitoring, recordkeeping and reporting in compliance with 40 CFR Part 75 with regard to Hg mass emissions, as required by 40 CFR 60.24(h)(4).

4. A demonstration of the state's legal authority to carry out the State Plan as submitted, as required by 40 CFR 60.24(h)(5).

[1] US Environmental Protection Agency, *Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units; Final Rule* 70 Federal Register 28606 (May 18, 2005). See also *Revision of December 2000 Clean Air Act Section 112(n) Finding Regarding Electric Utility Steam Generating Units; and Standards of Performance for New and Existing Electric Utility Steam Generating Units: Reconsideration*, 71 Fed. Reg. 33388 (June 9, 2006).

5. An inventory of all Hg Budget units in the state, as required by 40 CFR 60.25(a).

6. An inventory of the Hg emissions from Hg Budget units in the state, as required by 40 CFR 60.25(a).

7. Provisions for annual state progress reports to EPA on implementation of the State Plan, as required by 40 CFR 60.25(e).

C. The Background Document – This contains background information for the adoption of the State Plan, as well as a discussion of the issues involved.

D. Proposed Amendments – MassDEP is proposing amendments to the Air Pollution Control Regulations – 310 CMR 7.02 "Plan Approval and Emission Limitations" and 310 CMR 7.29 "Emissions Standards for Power Plants." 310 CMR 7.29 already includes emissions standards that assure compliance with the Emission Guidelines. In addition, required 40 CFR Part 75 monitoring, recordkeeping and reporting requirements will be adopted into the Air Pollution Control Regulations.

MassDEP intends to submit the State Plan (which includes the Air Pollution Control Regulations) to EPA after public hearings.

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B. STATE PLAN FOR THE

CLEAN AIR MERCURY RULE (CAMR)

October 2006

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SUMMARY

This is the public hearing draft of the State Plan for the Clean Air Mercury Rule (CAMR) prepared by the Massachusetts Department of Environmental Protection (MassDEP), as required by Section 111(d) of the Clean Air Act Amendments of 1990, 42 U.S.C § 7411 (the CAAA).

INTRODUCTION

On May 18, 2005, under section 111 of the Clean Air Act Amendments (CAAA) of 1990, 42 USC § 7411, the United States Environmental Protection Agency (EPA) published in the Federal Register "Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units." This action is referred to as the "Clean Air Mercury Rule" (CAMR) and amends *Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978* (40 Code of Federal Regulations (CFR) Part 60, Subpart Da) and establishes *Emission Guidelines and Compliance Times for Coal-Fired Electric Steam Generating Units* (40 CFR Part 60, Subpart HHHH).[2] Electric Generating Units (EGUs) subject to CAMR combust coal and are referred to as "Hg Budget units."

There are eight existing Hg Budget units in the Commonwealth of Massachusetts (namely, Brayton Point units 1 to 3, Salem Harbor units 1 to 3, Mt. Tom unit 1 and NRG Somerset unit 8) that are subject to the Emission Guidelines and will be regulated under the State Plan being proposed herein.

With the promulgation of the Emission Guidelines, Section 111(d) of the CAAA requires EPA to establish procedures for states to submit a State Plan for implementing the Emission Guidelines. States must follow the State Plan procedures established in 40 CFR Part 60, Subpart B. For states to obtain approval of their State Plan by EPA, the State Plan must include the following:

1. A record of the public hearings on the State Plan, including hearings held prior to this proposal, and hearings to be held, as required by 40 CFR 60.24(f).

2. A demonstration that the emission standards and compliance schedules will result in compliance with the State's annual electrical generating unit (EGU) mercury (Hg) budget for the appropriate periods, as required by 40 CFR 60.24(h)(3).

3. Requirements for monitoring, recordkeeping and reporting in compliance with 40 CFR Part 75 with regard to Hg mass emissions, as required by 40 CFR 60.24(h)(4).

4. A demonstration of the state's legal authority to carry out the State Plan as submitted, as required by 40 CFR 60.24(h)(5).

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[2] US Environmental Protection Agency, *Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units; Final Rule* 70 Federal Register 28606 (May 18, 2005). See also *Revision of December 2000 Clean Air Act Section 112(n) Finding Regarding Electric Utility Steam Generating Units; and Standards of Performance for New and Existing Electric Utility Steam Generating Units: Reconsideration*, 71 Fed. Reg. 33388 (June 9, 2006).

5. An inventory of all Hg Budget units in the state, as required by 40 CFR 60.25(a).

6. An inventory of the Hg emissions from Hg Budget units in the state, as required by 40 CFR 60.25(a).

7. Provisions for annual state progress reports to EPA on implementation of the State Plan, as required by 40 CFR 60.25(e).

310 CMR 7.29, "Emissions Standards for Power Plants," submitted with this State Plan, incorporates emission limitations that are, at a minimum, as stringent as those outlined in the Emission Guidelines. In addition, the proposed amendments to 310 CMR 7.02, "Plan Approval and Emission Limitations," will insure that any new unit permitted in the Commonwealth will 1) comply with the New Source Performance Standards (NSPS) for Hg Budget units and 2) not cause the state to exceed its state Hg budget.

SECTION 1 - RECORD OF PUBLIC HEARINGS

MassDEP will publish a public notice at least 30 days prior to holding a public hearing on the State Plan and the amendments to 310 CMR 7.02 and 310 CMR 7.29. MassDEP will include a copy of that notice in the State Plan submitted to EPA, as well as a summary of comments received and responses. Corresponding documents will be included for Hg caps promulgated in 2001 and Hg standards promulgated in 2004.

SECTION 2 – DEMONSTRATION THAT THE EMISSION STANDARDS AND COMPLIANCE SCHEDULES WILL RESULT IN COMPLIANCE WITH THE STATE'S HG BUDGET FOR THE APPROPRIATE PERIODS

The 7.29 facility Hg cap and 7.29 Phase 1 and 2 emissions standards already contained in 310 CMR 7.29(5)(a)3. are the enforceable state mechanisms for insuring that existing Hg Budget units will not exceed the state Hg budget. For the units at the affected facilities that combust solid fossil fuel or ash, the owners and operators shall:

- As of October 1, 2006, ensure that the total annual Hg emissions from combustion of solid fossil fuel in units subject to 40 CFR Part 72 will not exceed a cap equal to the average annual emissions based on previous stack test results as required under 310 CMR 7.29(5)(a)3.c. (hereafter referred to as the 7.29 facility Hg cap).[3]
- As of January 1, 2008, comply with at least one of the following Hg emissions standards:
  - A facility average total Hg removal efficiency of 85% or greater, or
  - A facility average total Hg emissions rate of 0.0075 pounds/gigawatt hour (lbs/GWh) or less (hereafter referred to as the 7.29 Phase 1 emissions standards).
- As of October 1, 2012, comply with at least one of the following Hg emissions standards:
  - A facility average total Hg removal efficiency of 95% or greater, or

[3]Salem Harbor Station has entered into an Amended Administrative Consent Order with MassDEP requiring compliance with their 7.29 facility Hg cap beginning October 1, 2005.

- A facility average total Hg emissions rate of 0.0025 lbs/GWh or less (hereafter referred to as the 7.29 Phase 2 emissions standards).

See pages 8 to 10 of the Technical Support Document in this package for details of the demonstration that 310 CMR 7.29's emission standards and compliance schedules will result in compliance of existing Hg Budget units with the State's annual electrical generating unit (EGU) mercury (Hg) budget for the appropriate period. In summary:

- Because the 7.29 facility Hg cap is lower than the CAMR Phase 1 Hg budget and takes effect earlier than the 2010 effective date of the CAMR Phase 1 Hg budget, the 7.29 facility Hg cap constitutes compliance with the CAMR Phase 1 Hg budget and deadlines.

- Because the 7.29 Phase 1 emissions standards result in emission lower than the CAMR Phase 1 Hg budget and takes effect earlier than the 2010 effective date of the CAMR Phase 1 Hg budget, the 7.29 Phase 1 emissions standards constitute compliance with the CAMR Phase 1 Hg budget and deadlines.

- Because the 7.29 Phase 2 emissions standards result in emissions lower than the CAMR Phase 2 Hg budget and takes effect earlier than the 2018 effective date of the CAMR Phase 2 Hg budget, the 7.29 Phase 2 emissions standards constitute compliance with the CAMR Phase 2 Hg budget and deadlines.

The 310 CMR 7.02 provision proposed in this package is the enforceable state mechanism for insuring that new Hg Budget units, in combination with existing Hg Budget units, will not exceed the state Hg budget. See page 12 of the Technical Support Document in this package for details of the demonstration that 310 CMR 7.02's emission standards and compliance schedules will result in compliance of new Hg Budget units with the State's annual electrical generating unit (EGU) mercury (Hg) budget for the appropriate period. In summary:

- Because MassDEP will not issue an approval that causes the CAMR Phase 1 or 2 Hg budget to be exceeded, the new 310 CMR 7.02 provision constitutes compliance for new units with the CAMR Phase 1 and 2 Hg budget and deadlines.

SECTION 3 – MONITORING, RECORDKEEPING AND REPORTING

Requirements for monitoring, recordkeeping and reporting of Hg mass emissions in compliance with 40 CFR Part 75, as required by 40 CFR 60.24(h)(4), are specified in 310 CMR 7.29(5)(a)3.g. and (7)(b).

SECTION 4 - DEMONSTRATION OF STATE'S LEGAL AUTHORITY

The final State Plan submitted to EPA will contain a demonstration that MassDEP has legal authority under existing state statutes to carry out the requirements of Section 111(d) of CAAA for Hg Budget units.

SECTION 5 - INVENTORY OF HG BUDGET UNITS

There are eight existing Hg Budget units in the Commonwealth of Massachusetts (namely, Brayton Point units 1 to 3, Salem Harbor units 1 to 3, Mt. Tom unit 1 and NRG Somerset unit 8) that are subject to the Emission Guidelines and will be regulated under the State Plan being proposed herein.

SECTION 6 - INVENTORY OF HG EMISSIONS FROM HG BUDGET UNITS IN MASSACHUSETTS

Total Hg emissions from existing Massachusetts Hg Budget units are equivalent to the sum of the four 310 CMR 7.29 facility Hg caps, or 185 pounds. Beginning October 1, 2006, 310 CMR 7.29(5)(a)3.c. limits Hg Budget unit emissions to "the average…pounds of mercury emitted per million Btu consumed [measured during stack tests in 2001 and 2002] multiplied by the heat input in million Btu averaged over" a representative three-calendar-year period. These values, in pounds of Hg per year, are as follows:

Brayton Point Station	146.6
Mt. Tom Station	4.1
Salem Harbor Station	21.2
Somerset Station	13.1
Total	185.0

For projections of future year emissions, see Appendix A of the Technical Support Document in this package.

SECTION 7 – PROVISIONS FOR ANNUAL STATE PLAN PROGRESS REPORT TO EPA ON IMPLEMENTATION OF THE STATE PLAN

Provisions for annual state progress report to EPA on implementation of the State Plan, as required by 40 CFR 60.25(e). MassDEP will report to EPA on an annual basis the information specified in 40 CFR 60.25(f), namely:
(1) Enforcement actions initiated against designated facilities during the reporting period, under any emission standard or compliance schedule of the plan.
(2) Identification of the achievement of any increment of progress required by the applicable plan during the reporting period.
(3) Identification of designated facilities that have ceased operation during the reporting period.
(4) Submission of emission inventory data for designated facilities that were not in operation at the time of plan development but began operation during the reporting period.
(5) Submission of additional data as necessary to update emission inventory data information or previous progress reports.

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C. Background Information and Technical Support Document for Proposed Amendments to 310 CMR 7.00 et seq.:

310 CMR 7.02 "Plan Approval and Emission Limitations" and 310 CMR 7.29 "Emissions Standards for Power Plants"

REGULATORY AUTHORITY
M. G. L. c. 111, Sections 142A through 142N

OCTOBER 2006

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A. SUMMARY

The Massachusetts Department of Environmental Protection (MassDEP) is proposing to adopt a State Plan and regulatory amendments to 310 Code of Massachusetts Regulations (CMR) 7.02 and 310 CMR 7.29 to implement the requirements of the federal Clean Air Mercury Rule (CAMR) promulgated by the United States Environmental Protection Agency (EPA) on May 18, 2005. CAMR caps nationwide mercury (Hg) emissions from new and existing coal-fired power plants in two phases, establishes a voluntary cap-and-trade program to achieve reductions and sets specific emissions limits for new coal-fired power plants.

MassDEP proposes to rely on its existing power plant regulations (310 CMR 7.29), with certain amendments, to meet CAMR's requirements. 310 CMR 7.29 establishes Hg emissions standards for coal-fired power plants in Massachusetts that are more stringent than those in CAMR. Because 310 CMR 7.29 is more stringent[4] than CAMR (in both compliance dates and emission limits), the proposed State Plan relies on 310 CMR 7.29 for compliance with CAMR and does not backslide by changing any MA deadlines or emission limits for existing units. MassDEP also proposes to amend 310 CMR 7.02 to ensure that Hg emissions from any new coal-fired power plants do not exceed the caps CAMR imposes on Massachusetts.

MassDEP does not propose to participate in CAMR's cap-and-trade program, but will instead rely on existing facility-specific caps and Hg emissions standards to achieve more certain reductions in Hg emissions (compared to a trading approach), ensuring better protection of public health and the environment. Participation in the Mercury Budget Trading Program could result in increased Hg emissions in MA or in upwind states that affect MA, were MA to fully allocate the CAMR budgets to MA facilities. Even if Massachusetts were to participate in the Mercury Budget Trading Program and allocate allowances at the level of emissions allowed by 310 CMR 7.29, there would be no guarantee that emissions at any particular location would be controlled, thus potentially creating new Hg hotspots and exacerbating existing Hg hotspots as Hg bio-accumulates over time. For similar reasons, many other states are also proposing not to participate in EPA's Mercury Budget Trading Program.

These regulatory amendments propose to allow a monitoring methodology (i.e., sorbent traps) that was not available when the 310 CMR 7.29 Hg emission limits were established in 2004. Recent field demonstrations have established that a sorbent trap monitoring system can accurately quantify Hg emissions. This monitoring approach will provide flexibility and likely reduce facility monitoring costs.

B. REGULATORY HISTORY AND PURPOSE

On May 18, 2005, under section 111 of the Clean Air Act Amendments (CAAA) of 1990, 42 USC § 7411, EPA published in the Federal Register "Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units." This action is referred to as the "Clean Air Mercury Rule" (CAMR) and amends *Standards of Performance for Electric Utility*

[4] For example, by 2018, mercury emissions under 310 CMR 7.29 will be 27% of the mercury emissions allowed under CAMR.

Steam Generating Units for Which Construction is Commenced After September 18, 1978 (40 Code of Federal Regulations (CFR) Part 60, Subpart Da) and establishes *Emission Guidelines and Compliance Times for Coal-Fired Electric Steam Generating Units* (40 CFR Part 60, Subpart HHHH).[5] Electric Generating Units (EGUs) subject to CAMR combust coal and are referred to as "Hg Budget units."

CAMR contains a total national Hg budget that is apportioned to the states. For 2010 to 2017, the nationwide cap for Hg emissions is 38 tons per year. For 2018 and beyond, the nationwide cap for Hg emissions is 15 tons per year. Hg emissions from both existing and new Hg Budget units must remain within the national caps. Under CAMR, Massachusetts' annual EGU Hg budget is 344 pounds for phase 1 (CAMR Phase 1 Hg budget) and 136 pounds for phase 2 (CAMR Phase 2 Hg budget).

Hg Budget units are the largest remaining source category of Hg emissions in the country. CAMR relies heavily on Hg emissions reductions expected from the addition of NO_x and SO_2 pollution control devices at Hg Budget units in the United States under EPA's Clean Air Interstate Rule (CAIR).[6] When fully implemented, EPA expects CAMR to reduce national Hg Budget unit emissions of Hg from 48 tons per year (in 1999) to 15 tons, a reduction of nearly 70 percent.

The CAMR New Source Performance Standards (NSPS) amendments to 40 CFR Part 60, Subpart Da establish Hg emissions limits for new Hg Budget units constructed on or after January 30, 2004. New Hg Budget units must meet the following standards of performance based on gross energy output[7]:

NSPS Hg Limits for New Hg Budget Units	
Unit Type	Average pounds per megawatt hour for every 12-month period (lbs/MWh)
Bituminous coal units	20×10^{-6}
Subbituminous coal (wet units)	66×10^{-6}
Subbituminous coal (dry units)	97×10^{-6}
Lignite coal units	175×10^{-6}
Coal refuse units	16×10^{-6}
Integrated gasification combined cycle (IGCC) units	20×10^{-6}
Source: US Environmental Protection Agency, *Revision of December 2000 Clean Air Act Section 112(n) Finding Regarding Electric Utility Steam Generating Units; and Standards of Performance for New and Existing Electric Utility Steam Generating Units: Reconsideration*, 71 Fed. Reg. 33388, 33395 (June 9, 2006).	

[5] US Environmental Protection Agency, *Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units; Final Rule* 70 Federal Register 28606 (May 18, 2005). See also *Revision of December 2000 Clean Air Act Section 112(n) Finding Regarding Electric Utility Steam Generating Units; and Standards of Performance for New and Existing Electric Utility Steam Generating Units: Reconsideration*, 71 Fed. Reg. 33388 (June 9, 2006).

[6] MassDEP is currently working on its CAIR regulation that is expected to be finalized in Spring 2007.

[7] 70 Fed. Reg. at 28610.

Under section 111(d) of the CAAA, CAMR also establishes "standards of performance" for existing Hg Budget units. Rather than adopt emissions standards for existing units, EPA interpreted the term "standards of performance" to include a market-based cap-and-trade program, and therefore established the "Mercury Budget Trading Program" in 40 CFR Part 60, Subpart HHHH.

Similar to CAIR, EPA adopted a model cap-and-trade rule that States may adopt to demonstrate compliance with the requirements of CAMR; however, States can chose to achieve the required reductions without joining the national cap-and-trade program.[8] The Hg budget apportioned to each state is binding on the State, even it if does not participate in the EPA-run national Mercury Budget Trading Program.[9] For States that choose not to join the national Mercury Budget Trading Program, the State must impose control requirements that will limit statewide emissions from new and existing Hg Budget units to the amount of the State budget. Moreover, States are authorized to require emissions reductions beyond those required by the State budget, and nothing in the final CAMR precludes States from requiring stricter controls.[10]

CAMR requires Hg Budget units to calculate Hg emissions by following the procedures of 40 CFR Part 75. Even if a State does not participate in the national Mercury Budget Trading Program, Hg Budget units are required to comply with the monitoring, recordkeeping and reporting requirements of 40 CFR Part 75, including submitting electronic data reports of Hg emissions to EPA each calendar quarter beginning January 1, 2009. Monitoring options include 1) continuously collecting Hg emissions data from each affected unit using a Continuous Emissions Monitoring System (CEMS); 2) an appropriate long-term method (e.g., sorbent trap) that can collect an uninterrupted, continuous sample of the Hg in the flue gases emitted from the unit; 3) stack testing for low emitters; or 4) an EPA-approved facility-specific alternative monitoring system, for which any facility may petition. CAMR also requires the owner or operator of a Hg Budget unit "to maintain records of all information needed to demonstrate compliance with the applicable Hg emissions limit, including the results of performance tests, data from the continuous monitoring systems, fuel analyses, calculations used to assess compliance, and any other information specified in 40 CFR 60.7 (General Provisions)."[11]

Under section 111 of the CAAA, States have eighteen (18) months from the date of the final CAMR to submit a State Plan demonstrating how they will meet the assigned CAMR Phase 1 and 2 Hg budgets. Each State Plan must include fully adopted state rules to achieve Hg reductions by 2010 and 2018.[12]

For existing Hg Budget units, MassDEP proposes to meet CAMR requirements by relying on the agency's existing regulation 310 CMR 7.29, "Emissions Standards for Power Plants," which already requires Hg emissions reductions beyond the CAMR Phase 1 and 2 Hg budgets for Massachusetts well before the applicable CAMR compliance dates of 2010 and 2018. MassDEP is not proposing to change existing emissions standards or compliance dates to those in CAMR, in order to avoid backsliding from the stringent but achievable standards of 310 CMR 7.29. 310 CMR 7.29 already

[8] Id. at 28632.
[9] Id. at 28610.
[10] Id.
[11] Id. at 28611.
[12] Id. at 28632.

requires affected budget units to install CEMS; however, MassDEP proposes to amend 310 CMR 7.29 to require units to install and operate CEMS in compliance with 40 CFR Part 75 (as required by CAMR), including allowing the use of sorbent trap monitoring systems.

For new Hg Budget units, MassDEP proposes to meet CAMR requirements through amendments to 310 CMR 7.02, "Plan Approval and Emission Limitations" that would give MassDEP the authority to disapprove a plan approval application from a new Hg Budget unit if the approval would result in Hg emissions above the CAMR Phase 1 and 2 Hg budgets.

C. HISTORY OF EXISTING MASSACHUSETTS MERCURY RULE FOR POWER PLANTS

On May 11, 2001, MassDEP adopted 310 CMR 7.29, "Emissions Standards for Power Plants," which set initial Hg emissions caps on four existing coal-fired power plants. For background information on the health effects of Hg and on Massachusetts-imposed facility-specific Hg caps see the June 2000 Technical Support Document entitled *Background Document and Technical Support for Public Hearings on Proposed Amendments to 310 CMR 7.00 et seq.: 310 CMR 7.29 – Emission Standards for Power Plants* (hereafter referred to as the "June 2000 Background Document"). See also the April 2001, *Summary of Comments and Responses from Public Hearings on the Proposed Regulation, 310 CMR 7.29*.[13]

As required by the May 2001 regulation, in December 2002 MassDEP released "Evaluation of the Technological and Economic Feasibility of Controlling and Eliminating Mercury Emissions From the Combustion of Solid Fossil Fuel."[14] This evaluation concluded that control of Hg emissions from solid fossil-fuel fired facilities was feasible.

Based on the Feasibility Evaluation, on June 4, 2004, MassDEP amended 310 CMR 7.29, adopting specific Hg emissions standards and more detailed requirements for calculating Hg emissions caps. For background information on amending 310 CMR 7.29 to add Hg emissions standards, see the October 2003 *Background Document and Technical Support for Public Hearings on Proposed Amendments to 310 CMR 7.00 et seq.: 310 CMR 7.29 – Emission Standards for Power Plants*[15] (hereafter referred to as the "October 2003 Background Document"). See also the May 2004 *Response to Comments on Propose Amendments to 310 CMR 7.29 – Emission Standards for Power Plants*[16] (hereafter referred to as the "May 2004 Response to Comments Document"). Note that in August 2004 a correction was made to the numbering of two sections in the promulgated Hg amendments.

The existing Massachusetts Hg emissions reduction rule for coal-fired power plants, 310 CMR 7.29, requires the four affected facilities in Massachusetts to comply with an annual Hg cap starting in October 2006 and Hg emissions standards starting January 1, 2008. The following

[13] http://www.mass.gov/dep/air/laws/finalrsn.doc and http://www.mass.gov/dep/air/laws/finalrtc.doc and http://www.mass.gov/dep/air/laws/rtcnames.doc

[14] http://mass.gov/dep/images/mercfeas.doc or http://mass.gov/dep/images/mercfeas.pdf

[15] http://www.mass.gov/dep/images/hgtsdx03.doc and http://www.mass.gov/dep/images/hgrevx03.doc or http://www.mass.gov/dep/images/hgtsdx03.pdf and http://www.mass.gov/dep/images/hgrevx03.pdf

[16] http://www.mass.gov/dep/images/hgrtc.doc or http://www.mass.gov/dep/images/hgrtc.pdf

units that are subject to 310 CMR 7.29's Hg provisions constitute all existing Massachusetts Hg Budget units subject to CAMR: Brayton Point units 1 to 3, Salem Harbor units 1 to 3, Mt. Tom unit 1 and NRG Somerset unit 8. For the units at the affected facilities that combust solid fossil fuel or ash, the owners and operators shall:

- As of October 1, 2006, ensure that the total annual Hg emissions from combustion of solid fossil fuel in units subject to 40 CFR Part 72 will not exceed a cap equal to the average annual emissions based on previous stack test results as required under 310 CMR 7.29(5)(a)3.c. (hereafter referred to as the 7.29 facility Hg cap).[17]
- As of January 1, 2008, comply with at least one of the following Hg emissions standards:
  - A facility average total Hg removal efficiency of 85% or greater, or
  - A facility average total Hg emissions rate of 0.0075 pounds/gigawatt hour (lbs/GWh) or less (hereafter referred to as the 7.29 Phase 1 emissions standards).
- As of October 1, 2012, comply with at least one of the following Hg emissions standards:
  - A facility average total Hg removal efficiency of 95% or greater, or
  - A facility average total Hg emissions rate of 0.0025 lbs/GWh or less (hereafter referred to as the 7.29 Phase 2 emissions standards).

Under 310 CMR 7.29, beginning October 1, 2006, to demonstrate compliance with the facility's Hg cap, affected facilities are required to conduct emissions testing at least every other calendar quarter. Beginning January 1, 2008, to demonstrate compliance with the facility's Hg cap and the emissions standards, affected facilities are required to install, certify and operate CEMS to measure Hg emissions from each affected unit.

D. DESCRIPTION OF PROPOSED AMENDMENTS TO 310 CMR 7.02 AND 310 CMR 7.29 TO COMPLY WITH CAMR

MassDEP is proposing amendments to 310 CMR 7.02 and 310 CMR 7.29 to comply with the CAMR State Plan submittal requirements. MassDEP does not propose to participate in the CAMR national Mercury Budget Trading Program but will instead rely on existing 310 CMR 7.29 facility-specific caps and Hg emissions standards to achieve more certain reductions in Hg emissions (compared to a trading approach), ensuring better protection of public health and the environment.[18]

MassDEP is not proposing to modify existing emissions standards and compliance dates in 310 CMR 7.29 since these standards are more stringent than CAMR. MassDEP is proposing to require facilities to comply with the emissions monitoring, record keeping and reporting provisions of 40 CFR Part 75 (as required by CAMR) and to allow an alternative Hg monitoring technology option (i.e., sorbent trap monitoring systems). MassDEP is not proposing to adopt a low emitter alternative monitoring option (i.e., stack testing) provided in CAMR, except to the

[17]Salem Harbor Station has entered into an Amended Administrative Consent Order with MassDEP requiring compliance with their 7.29 facility Hg cap beginning October 1, 2005.

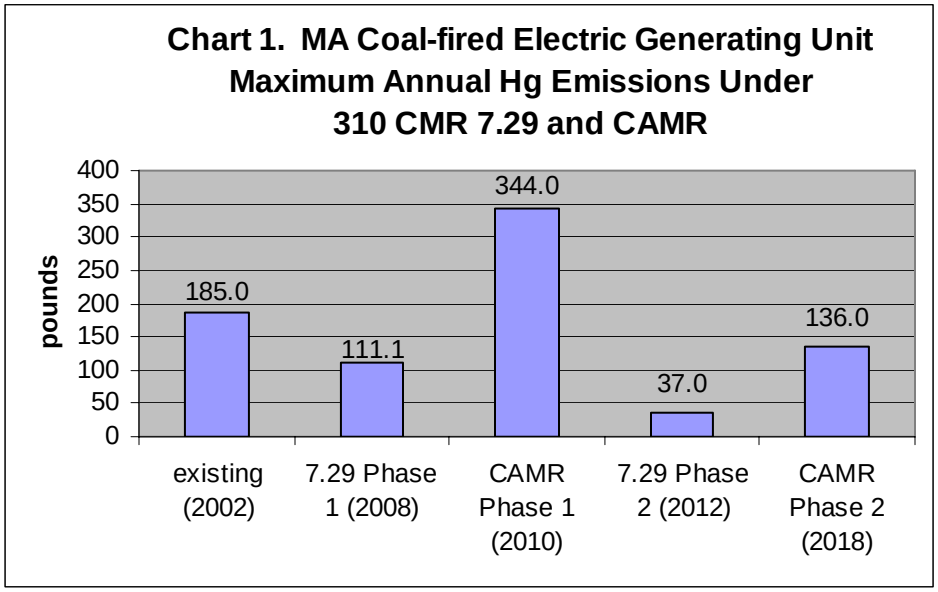
[18] Massachusetts, along with eight other states, on March 29, 2005 filed a petition in the D.C. Circuit Court requesting reconsideration on CAMR. The case is *State of New Jersey, et al. v. U.S. Environmental Protection Agency*, Docket No. 06-1211 (D.C. Cir.).

limited extent currently permitted in 310 CMR 7.29(5)(a)3.g.iii. through the end of 2009 for units with an enforceable commitment to terminate operations by January 1, 2010.

At this time, MassDEP solicits comments only on the specific amendments put forth in this proposal, and their use to meet the State Plan requirements of CAMR, and not on 310 CMR 7.02 or 310 CMR 7.29 matters previously decided.

1. Demonstration that existing 7.29 Facility Caps and Emissions Standards are more stringent than the CAMR Phase 1 and 2 Hg budgets

The 7.29 facility Hg caps and 7.29 Phase 1 and 2 emissions standards are more stringent and are required earlier than the CAMR Phase 1 and 2 Hg budgets. See Chart 1 and the following text for details.



To demonstrate compliance of existing Hg Budget units with the CAMR Phase 1 Hg budget, Massachusetts is relying on the 7.29 facility Hg cap of 185 pounds. Beginning October 1, 2006, 310 CMR 7.29(5)(a)3.c. limits Hg Budget unit emissions to "the average…pounds of mercury emitted per million Btu consumed [measured during stack tests in 2001 and 2002] multiplied by the heat input in million Btu averaged over" a representative three-calendar-year period. As indicated on page 16 of the October 2003 Background Document, the

"annual mercury caps, in pounds of mercury per year, would be:

Brayton Point Station	146.6
Mt. Tom Station	4.1
Salem Harbor Station	21.2
Somerset Station	13.1
Total	185.0"

Because the 7.29 facility Hg cap of 185 pounds is lower than the CAMR Phase 1 Hg budget of 344 pounds and takes effect October 1, 2006, earlier than the 2010 effective date of the CAMR Phase 1 Hg budget, the 7.29 facility Hg cap constitutes compliance with the CAMR Phase 1 Hg budget and deadlines.[19]

As additional evidence to demonstrate compliance of existing Hg Budget units with the CAMR Phase 1 Hg budget, Massachusetts also is relying on the 7.29 Phase 1 emissions standards. Beginning January 1, 2008, 310 CMR 7.29(5)(a)3.e. limits Hg Budget unit emissions to the 7.29 Phase 1 emissions standards of 85% capture or 0.0075 lbs/GWh. Charts 1 and 2 on page 26 of the May 2004 Response to Comments show that the quantity of Hg expected to be emitted annually when the 7.29 Phase 1 emissions standards take effect is no more than 85 pounds if facilities choose to comply with the 85% capture standard and no more than 86 pounds if facilities choose to comply with the 0.0075 lbs/GWh standard. The calculations for compliance with the 0.0075 lbs/GWh standard were based on gigawatt hours generated in 2000. As a more conservative approach, MassDEP has calculated that, if all facilities (including NRG Somerset, which is expected to terminate operations by January 1, 2010[20]) were to run at full load at the 0.0075 lbs/GWh 7.29 Phase 1 emissions standard for all 8760 hours in a year, annual state-wide emissions would be expected to be no more than 111.1 pounds, well below the CAMR Phase 1 Hg budget. See attached Appendix A, which is a spreadsheet demonstrating that 7.29 Phase 1 emissions standards are more stringent than the CAMR Phase 1 Hg budget.

Because 111.1 pounds (as the most conservative scenario) is lower than the CAMR Phase 1 Hg budget of 344 pounds and takes effect January 1, 2008, earlier than the 2010 effective date of the CAMR Phase 1 Hg budget, the 7.29 Phase 1 emissions standards constitute compliance with the CAMR Phase 1 Hg budget and deadlines.

To demonstrate compliance of existing Hg Budget units with the CAMR Phase 2 Hg budget, Massachusetts is relying on the 7.29 Phase 2 emissions standards. Beginning October 1, 2012, existing 310 CMR 7.29(5)(a)3.f. limits Hg Budget unit emissions to the 7.29 Phase 2 emissions standards of 95% capture or 0.0025 lbs/GWh. Charts 1 and 2 on page 26 of the May 2004 Response to Comments detail that the quantity of Hg expected to be emitted annually when the 7.29 Phase 2 emissions standards take effect is no more than 28 pounds if facilities choose to comply with the 95% capture standard and no more than 29 pounds if facilities choose to comply with the 0.0025 lbs/GWh standard. The calculations for compliance with the 0.0025 lbs/GWh standard were based on gigawatt hours generated in 2000. As a more conservative approach,

[19] 310 CMR 7.29(6)(a)4. allows any facility with annual Hg emissions of less than 5 pounds, as measured during stack tests in 2001 and 2002, to use early or off-site reductions to demonstrate compliance through September 30, 2012. Mt. Tom Station is the only unit that emitted less than 5 pounds and is therefore eligible to use this provision. If the 136 MW Mt. Tom unit ran at full load at the 7.29 Phase 1 emissions limit for all 8760 hours in a year, it would emit 8.9 pounds of Hg. However, even if Mt. Tom emitted 8.9 pounds, instead of 4.1 pounds, state-wide emissions would be 189.8 pounds, still well below the CAMR Phase 1 Hg Budget.

[20] In addition, 310 CMR 7.29(5)(a)3.e.iii. allows units with an enforceable commitment to terminate operations by January 1, 2010 to use early or off-site reductions to demonstrate compliance through January 1, 2010. Since the CAMR Phase 1 Hg budget does not take effect until 2010, and any unit that utilized this provision would shut down prior to 2010, this provision has no impact on Massachusetts' ability to keep emissions under the CAMR Phase 1 Hg budget.

MassDEP has calculated that, if all facilities (including NRG Somerset, which is expected to terminate operations by January 1, 2010) were to run at full load at the 0.0025 lbs/GWh 7.29 Phase 2 emissions standard for all 8760 hours in a year, annual state-wide emissions would be expected to be no more than 37 pounds, well below the CAMR Phase 2 Hg budget. See attached Appendix A, which is a spreadsheet demonstrating that 7.29 Phase 2 emissions standards are more stringent than the CAMR Phase 2 Hg budget.

Because 37 pounds (as the most conservative scenario) is lower than the CAMR Phase 2 Hg budget of 136 pounds and takes effect October 1, 2012, earlier than the 2018 effective date of the CAMR Phase 2 Hg budget, the 7.29 Phase 2 emissions standards constitute compliance with the CAMR Phase 2 Hg budget and deadlines.

Furthermore, while CAMR requires compliance with the CAMR Phase 1 and 2 Hg budget on a calendar year basis, 310 CMR 7.29's Phase 1 and 2 emissions standards are more stringent as compliance is based on a rolling 12-month average, recalculated monthly.

Lastly, while CAMR requires compliance based only on vapor phase Hg, 310 CMR 7.29 is more stringent as it requires compliance with the 7.29 facility Hg cap and the 7.29 Phase 1 and 2 emissions standards based on the total of vapor-phase and particulate-bound Hg. Note that while 310 CMR 7.29 requires facilities to report total Hg emissions to MassDEP each January 30 beginning January 30, 2007, CAMR's electronic reporting format begins January 1, 2009 and will only support and require submittal of vapor-phase Hg. Since the above analysis demonstrated compliance with CAMR Phase 1 and 2 Hg budgets based on total Hg emissions, it is clear that compliance would be even more easily demonstrated based on only the subset of vapor-phase Hg emissions.

For the reasons described above, 310 CMR 7.29 is more stringent than CAMR and Massachusetts Hg Budget units do not currently and will not in the future exceed the CAMR Phase 1 and 2 Hg budgets.

2. Monitoring, Recordkeeping and Reporting

MassDEP proposes to clarify that the existing Hg monitoring options under 310 CMR 7.29 allow sorbent trap monitoring systems. 310 CMR 7.29(5)(a)3.g. requires facilities, by January 1, 2008, to measure Hg stack emissions from each affected unit by installing, certifying and operating CEMS. CEMS are defined as "a monitoring system for continuously measuring the emissions of a pollutant." Subsequent to MassDEP adopting this definition on June 4, 2004, CAMR adopted definitions for "CEMS" and "sorbent trap monitoring system" that make clear the distinctions between these two types of continuous monitoring systems. In short, CEMS provide a stack pollutant reading at least once every 15 minutes, while sorbent trap monitoring systems continuously sample stack pollutant levels, and calculate an average Hg concentration for each hour of the time period (e.g., two weeks) that the sorbent trap is placed in the stack. Both types of continuous Hg monitoring systems must meet accuracy tests in accordance with 40 CFR Part 75.

Recent field demonstrations at several facilities supervised by joint EPA and industry research groups have established that a sorbent trap monitoring system, using paired sorbent traps containing iodinized charcoal or other suitable reagents, can provide Hg emissions data as accurate as presently available Hg CEMS systems.[21] Therefore, EPA has allowed sorbent trap monitoring systems in CAMR. Similarly, MassDEP is proposing to amend 310 CMR 7.29 to add an umbrella definition of "monitoring system" that includes CEMS, sorbent traps and other approved alternatives, to clarify the definition of "CEMS," to adopt a definition of "sorbent trap monitoring system," and to clarify that an affected facility has the discretion to submit a monitoring plan relying on a Hg CEMS or a sorbent trap monitoring system using a monitoring protocol following 40 CFR Part 75.

CAMR requires Hg Budget units to determine and report emissions by following the procedures of 40 CFR Part 75 beginning January 1, 2009, including submitting an electronic data report each calendar quarter containing consolidated Hg, sulfur dioxide, nitrogen oxides and carbon dioxide emissions data. MassDEP proposes to replace certain monitoring, recordkeeping and reporting provisions of 310 CMR 7.29 with provisions under 40 CFR Parts 60 and 75. These federal monitoring, recordkeeping and reporting requirements are generally as stringent as 310 CMR 7.29; however, there are provisions in 310 CMR 7.29 that are not included as part of CAMR.

In particular, 310 CMR 7.29 requires affected facilities to report particulate-bound Hg, which is not addressed by CAMR. As noted above, while 310 CMR 7.29 requires facilities to report total Hg emissions to MassDEP each January 30, CAMR's quarterly electronic data reporting format will only support and require submittal of vapor-phase Hg. The report submitted to MassDEP by Hg Budget units each January 30 must demonstrate compliance with 310 CMR 7.29's total Hg standards, while the electronic data report submitted to EPA by Hg Budget units each calendar quarter will demonstrate that Hg Budget units do not exceed the CAMR Phase 1 and 2 Hg budgets for vapor-phase Hg.

In addition, facilities choosing to comply with 310 CMR 7.29's Hg removal efficiency standards must propose and have approved by MassDEP a methodology by which to demonstrate compliance, since this type of standard is not addressed by CAMR's reporting calculations.

3. Providing compliance flexibility for low emitters

CAMR provides for an alternative monitoring option for low emitting units. Qualifying units may use periodic emissions testing (i.e., stack tests) to quantify their Hg emissions, rather than continuously monitoring the Hg concentration. To qualify, affected units must meet a low emitter criterion based on annual emissions. For affected units with Hg emissions of 9 lbs/year or less, at minimum annual emissions testing is required. For affected units with Hg emissions greater than 9 lbs/year but less than or equal to 29 lbs/year, at minimum semi-annual testing is required.[22]

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[21] US Environmental Protection Agency, *Mercury Emissions Monitoring Program for Coal-Fired Boilers Under the Clean Air Mercury Rule Status Report* (February 2006) pp. 2-5. See http://www.epa.gov/airmarkets/camr/implementation.html.

[22] 70 Fed. Reg. at 28634.

MassDEP is not proposing to adopt the low emitter alternative monitoring option (i.e., stack testing) provided in CAMR, except to the limited extent stack testing is currently allowed in 310 CMR 7.29(5)(a)3.g.iii. through the end of 2009 for units with an enforceable commitment to terminate operations by January 1, 2010. Since the existing 310 CMR 7.29 regulations require affected units to install a continuous monitoring system, and annual and semi-annual stack testing provides only a snap-shot of a unit's emissions, allowing units to rely on annual or semi-annual stack testing to determine compliance with a facility's annual cap or emissions standards would therefore be backsliding from the existing regulations. As discussed above, however, MassDEP will allow affected units to use either sorbent traps or CEMS, which provides flexibility for low mass emitters while maintaining a more accurate accounting of a unit's Hg emissions than stack testing.

An existing provision of 310 CMR 7.29 must be amended for consistency with CAMR. Under 310 CMR 7.29(5)(a)3.g.iii., a unit with an enforceable commitment to terminate operations by January 1, 2010 may choose between quarterly stack testing and Hg CEMS to document Hg emissions from January 1, 2008 until the unit terminates operations or until January 1, 2010, whichever is earlier, unless the unit must install CEMS to comply with a federal requirement. CAMR allows stack testing, as long as the unit demonstrates low emitter eligibility. Therefore, MassDEP is proposing to amend 310 CMR 7.29(5)(a)3.g.iii. to require units eligible to use quarterly stack testing under 310 CMR 7.29 to also meet CAMR's low mass emitter criteria.

4. New Hg Budget units

As part of the State Plan, MassDEP must ensure that new units comply with the NSPS and do not cause Massachusetts to exceed its CAMR Phase 1 or 2 Hg budget. The existing provisions of 310 CMR 7.02 require new or modified units to comply with all applicable New Source Performance Standards, including CAMR's NSPS limits for new Hg Budget units (listed above on page 4). In addition, under 310 CMR 7.02, new or modified units would need to use Best Available Control Technology for Hg emissions, which may be more stringent than NSPS, and meet all other applicable requirements for other pollutants.

To demonstrate compliance of new Hg Budget units with the CAMR Phase 1 and 2 Hg budgets, MassDEP proposes to add a new division (3)(o) in 310 CMR 7.02 giving MassDEP the authority to disapprove an application for a Limited Plan Approval or Comprehensive Plan Approval for a new solid-fuel fired facility if the Hg emissions from the facility under consideration, combined with the total Hg emissions from all existing solid-fuel fired facilities in Massachusetts, would exceed the CAMR Phase 1 or 2 Hg budget.

Because MassDEP will not issue an approval that causes the CAMR Phase 1 or 2 Hg budget to be exceeded, the new 310 CMR 7.02 provision constitutes compliance for new units with the CAMR Phase 1 and 2 Hg budget and deadlines.

5. Conforming Amendments

MassDEP also is proposing several miscellaneous amendments to 310 CMR 7.29 to conform with CAMR, including:

- amending 310 CMR 7.29(7)(b)1. to require facilities to report Hg emissions in the same scientific units and to the same number of decimal places as CAMR;
- clarifying in 310 CMR 7.29(5)(a)3.d.iii. that Relative Accuracy Test Audits on monitoring systems that measure only vapor-phase Hg shall determine relative accuracy of the monitoring system based only on vapor-phase Hg;
- deleting 310 CMR 7.29(5)(a)3.d.iv. since the testing requirements of 40 CFR Part 75 will apply instead; and
- requiring certification in 310 CMR 7.29(7)(b)4.b. that all Hg emissions have been reported, once quarterly electronic Hg emissions submittal to EPA is required beginning January 1, 2009.

6. Why Massachusetts is not joining the national Mercury Budget Trading Program

MassDEP believes that Hg emissions trading is inappropriate because it could cause increased Hg emissions (compared to Massachusetts' existing 310 CMR 7.29 requirements) and would allow for disparate local and regional impacts. Hg emissions trading simply will not insure that equal progress in reducing Hg deposition is achieved.

Massachusetts has long been on the forefront of efforts to control Hg emissions and to monitor the presence of Hg deposited within the state. A recent MassDEP study[23] has shown the strong link between local reductions in Hg emissions and reductions in Hg found in Massachusetts fish, indicating that trading Hg emissions on a regional or national level is not appropriate because such trading may not achieve reductions in Hg emissions where they are needed.

MassDEP's study revealed substantial reductions of Hg in fish tissue statewide, with the most significant reductions in the fish tissue found in the same area where the greatest reduction in local Hg emissions occurred - the northeast region of Massachusetts.

Hg emissions in northeastern Massachusetts decreased an estimated 87 percent between the late 1990s and 2004 due to the addition of pollution control devices on municipal solid waste combustors and the closure of medical waste incinerators in the region. Encouragingly, it appears these local reductions of Hg emissions resulted in reductions of Hg in Massachusetts fish. Under a trading scheme, if Hg allowances from elsewhere in the country could be purchased so that no local reductions were to occur, Massachusetts could still be burdened with higher levels of Hg in fish.

Under 310 CMR 7.29, Hg emissions from the affected facilities will decrease by more than 50% by January 1, 2008, and by approximately 85% by October 1, 2012, compared with the facilities' existing capped Hg emissions. If Massachusetts were to participate in CAMR's national Mercury Budget Trading Program and fully allocate the Massachusetts CAMR Phase 1 and 2 Hg budgets, then even if Massachusetts facilities achieved the 310 CMR 7.29 requirements, the in-

[23] Massachusetts Department of Environmental Protection Office of Research and Standards, *Massachusetts Fish Tissue Mercury Studies: Long-Term Monitoring Results, 1999-2004* (2006).

state reductions achieved by 310 CMR 7.29 would be negated, because Massachusetts facilities could sell their excess Hg allowances to Hg Budget units in upwind states that in turn could emit more Hg that could travel back to Massachusetts on the prevailing winds. If Massachusetts were to participate in CAMR's national Mercury Budget Trading Program and allocate allowances at the level of emissions allowed by 310 CMR 7.29, then there would be no guarantee that emissions at any particular location would be controlled, thus potentially creating new Hg hotspots and exacerbating existing Hg hotspots as Hg bio-accumulates over time.

Regionally, the Conference of New England Governors and Eastern Canadian Premiers (NEG/ECP) adopted a Mercury Action Plan[24] in 1998. Massachusetts is a signatory to this agreement. The NEG/ECP action plan established a long-term regional goal of virtual elimination of anthropogenic mercury emissions, with an interim goal of a 50% reduction in regional emissions by 2003, which was achieved. In 2001, after an evaluation of the interim goal, the NEG/ECP adopted another interim goal of an overall reduction of 75% or greater by 2010. The establishment of the 310 CMR 7.29 mercury emission standards for Massachusetts' power plants was and is consistent with the goals of the NEG/ECP Mercury Action Plan.

Locally, the Commonwealth has adopted Massachusetts Zero Mercury Strategy[25] with the ultimate goal of "the virtual elimination of both the use and release of anthropogenic mercury" and an interim goal of "a 75 percent reduction in emissions by 2010." The establishment of the 310 CMR 7.29 mercury emission standards for Massachusetts' power plants was and is consistent with the goals of the Massachusetts Zero Mercury Strategy.

For the above reasons, Massachusetts is choosing to not participate in the CAMR national Mercury Budget Trading Program.

E. AIR QUALITY IMPACTS

These proposed amendments have no negative air quality impacts with respect to existing units, because this regulatory proposal ensures no backsliding as MassDEP is not proposing to relax the existing Hg standards in 310 CMR 7.29. There are potential air quality benefits with respect to new units, as the proposed amendments prohibit issuing a plan approval to a new Hg Budget unit if its emissions in combination with the emissions from existing Hg Budget units would exceed the CAMR Phase 1 or 2 Hg budget. For information on the Hg emissions reductions due to the 2001 and 2004 310 CMR 7.29 Hg standards, please see the documents listed in footnotes 9, 10, 11 and 12.

F. ECONOMIC ANALYSIS

[24] *New England Governors/Eastern Canadian Premiers Mercury Action Plan 1998* (June 1998). See http://www.neg-ecp-environment.org/newsletters/News_NEG-ECP_Mercury_Action_Plan_(1998).pdf

[25] http://www.mass.gov/envir/Sustainable/resources/pdf/Resources_Hg_Strategy.pdf

The proposed amendments clarify that sorbent trap monitoring systems may be used to determine Hg emissions. This monitoring approach will provide flexibility and likely reduce facility Hg monitoring costs.

G. IMPACTS ON CITIES AND TOWNS

The proposed amendments apply only to coal-fired power plants and will have no adverse effect on cities and towns in the Commonwealth.

H. MASSACHUSETTS ENVIRONMENTAL POLICY ACT (MEPA)

Pursuant to 301 CMR 11.27 (Massachusetts Environmental Policy Act Regulations) the proposed regulations will not lessen the stringency of any existing applicable regulation or standard applicable to power plants, and, therefore, does not require the filing of an Environmental Notification Form (ENF).

I. PROGRAM IMPLEMENTATION

States that have Coal-fired Utility Units must submit a Section 111(d) State Plan by November 17, 2006. At a minimum, the State Plan must include:

a. Emissions standards and compliance schedules and demonstrate that they will result in compliance with the State's annual EGU Hg budget for the appropriate periods.
b. Requirements that EGUs comply with the monitoring, record keeping and reporting provisions of 40 CFR Part 75 with regard to Hg mass emissions.
c. A demonstration that the State has legal authority to: (i) Adopt emissions standards and compliance schedules necessary for attainment and maintenance of the State's relevant annual EGU Hg budget; and (ii) Require owners or operators of EGUs in the State to meet the monitoring, record keeping and reporting requirements in 40 CFR Part 75.

MassDEP expects to satisfy the requirements of section 111(d) of the CAAA by submitting a State Plan (including these regulations) to EPA for approval after holding public hearings. See the proposed State Plan included in this package.

J. PUBLIC PARTICIPATION

As provided by state law, MassDEP gives notice and provides the opportunity to review the proposed State Plan and amendments to existing regulations for implementing section 111(d) of the CAAA, the background document and any technical information, at least 21 days prior to holding a public hearing. Since the proposed regulation is in response to federal law and will be submitted to EPA, formal notice will be issued 30 days before the public hearings. The hearings will be held in accordance with the procedures of MGL Chapter 30A. A copy of the proposed State Plan and

amendments to the existing 310 CMR 7.02 and 7.29 are available on MassDEP's website at: http://www.mass.gov/dep/. Copies can also be obtained at MassDEP's headquarters at One Winter Street, Boston 02108 as well as each MassDEP regional office.

Appendix A: Spreadsheet demonstrating that 7.29 emissions standards are more stringent than the CAMR Phase 1 and 2 Hg budgets

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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KERRY HEALEY
Lieutenant Governor

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Secretary

ARLEEN O'DONNELL
Commissioner

D. Proposed Amendments to Regulations 310 CMR 7.02 and 310 CMR 7.29

October 2006

Add to 310 CMR 7.02:

310 CMR 7.02(3)(o) Compliance with Massachusetts Annual Electric Generating Unit (EGU) Mercury Budget. The Department shall only issue a plan approval to a coal-fired Electric Generating Unit (EGU) (as defined under 40 CFR 60.24(h)(8)) if the mercury emissions from the EGU covered by the plan application, combined with the mercury emissions from all other coal-fired EGUs with approvals pursuant to this section and the mercury emissions from all coal-fired EGUs regulated under 310 CMR 7.29, do not exceed the Massachusetts Annual EGU Mercury Budget in 40 CFR 60.24(h)(3).

Amend 310 CMR 7.29 by adding underlined text and deleting text in strikethroughs below.

310 CMR 7.29(2) Definitions:

ASH means bottom ash, fly ash or ash generated by an ash reduction process derived from combustion of fossil fuels, carbon or other substances.

BLOCK HOURLY AVERAGE means the average of all valid emission concentrations when the affected unit is operating, measured over a one-hour period of time from the beginning of an hour to the beginning of the next hour.

CALENDAR QUARTER means any consecutive three-month period (nonoverlapping) beginning January 1, April 1, July 1 or October 1.

CALENDAR YEAR means any period beginning January 1 and ending December 31.

CONTINUOUS EMISSION~~S~~ MONITORING SYSTEM or ~~(~~CEMS~~)~~ means ~~a monitoring system for continuously measuring the emissions of a pollutant~~the equipment required by 40 CFR Part 75 used to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of SO_2, NO_X, mercury, or CO_2 emissions or stack gas volumetric flow rate.

MONITORING SYSTEM means a continuous emission monitoring system, an alternative monitoring system, or a sorbent trap monitoring system under 40 CFR Part 75 as of June 9, 2006.

ROLLING with respect to an average means the calculation of an average by dropping the earliest month or calendar quarter value and incorporating the latest month or calendar quarter value for the period over which an average is calculated.

SORBENT TRAP MONITORING SYSTEM means the equipment required by 40 CFR Part 75 for the continuous monitoring of mercury emissions, using paired sorbent traps containing iodinized charcoal (IC) or other suitable reagent(s). This excepted monitoring system consists of a probe, the paired sorbent traps, a heated umbilical line, moisture removal components, an airtight sample pump, a dry gas meter, and an automated data acquisition and handling system. The monitoring system samples the stack gas at a rate proportional to the stack gas volumetric

flow rate. The sampling is a batch process. Using the sample volume measured by the dry gas meter and the results of the analyses of the sorbent traps, the average mercury concentration in the stack gas for the sampling period is determined, in units of micrograms per dry standard cubic meter (µg/dscm). Mercury mass emissions for each hour in the sampling period are calculated using the average mercury concentration for that period, in conjunction with contemporaneous hourly measurements of the stack gas flow rate, corrected for the stack gas moisture content.

TOTAL MERCURY means the sum of particulate-bound and vapor-phase (elemental and oxidized) mercury in combustion gases or emitted to the atmosphere.

7.29(5)(a)3. Mercury Emissions.

a. By December 1, 2002, the Department will complete an evaluation of the technological and economic feasibility of controlling and eliminating emissions of mercury from the combustion of solid fossil fuel in Massachusetts in accordance with the Mercury Action Plan of the Conference of New England Governors and Eastern Canadian Premiers.

b. deleted

c. The Emission Control Plan submitted to the Department under 310 CMR 7.29(6) shall demonstrate, and any person who owns, leases, operates or controls an affected facility shall ensure, that beginning at the time of the affected facility's earliest applicable compliance date in 310 CMR 7.29(6)(c), or at the time of the facility's earliest applicable Phase 1 NO_x and SO_2 compliance date under an administrative order existing prior to June 4, 2004, whichever is later, total annual mercury emissions from combustion of solid fuels in units subject to 40 CFR Part 72 located at an affected facility or from re-burn of ash in Massachusetts will not exceed the average annual emissions calculated using the results of the stack tests required in 310 CMR 7.29(5)(a)3.d.ii.. The average annual emissions calculated using the results of the stack tests required in 310 CMR 7.29(5)(a)3.d.ii. equal the average measured pounds of mercury emitted per million Btu consumed multiplied by the heat input in million Btu averaged over 1997, 1998 and 1999. A different three-calendar-year period within the five years prior to May 11, 2001 may be used if requested by the owner of an affected facility, and if the Department determines that the different period is more representative of historical actual heat input. Total annual mercury emissions equal the total emissions from:

i. combustion of solid fossil fuel in units subject to 40 CFR Part 72 located at an affected facility, determined using emissions testing at least every other calendar quarter from October 1, 2006 until a certified mercury ~~CEMS~~ monitoring system ~~are~~ is used to demonstrate compliance with the standards in 310 CMR 7.29(5)(a)3.e. or f., and using a certified mercury ~~CEMS~~ monitoring system thereafter, and

ii. re-burn of ash, where such ash was produced by the combustion of fossil fuel or ash at any affected facility. When ash is re-burned at an affected facility, the associated mercury emissions shall be attributed to the affected facility at which the ash is re-burned. When ash produced by an affected facility is used in Massachusetts as a cement kiln fuel, as an asphalt filler, or in other high temperature processes that volatilize mercury,

(i) the mercury content of the utilized ash shall be measured weekly using a method acceptable to the Department,

(ii) all of the mercury in the utilized ash shall be assumed to be emitted, unless it can be demonstrated with data acceptable to the Department that a lesser amount of mercury is emitted,

(iii) the associated mercury emissions shall be attributed to the affected facility from which the ash is shipped to the cement kiln, asphalt batching plant or other high temperature processing location, and

(iv) a proposal shall be submitted for Department approval at least 45 days prior to such use, or at least 45 days prior to October 1, 2006, whichever is later, detailing the proposed measurement methods to be used to comply with 7.29(5)(a)3.c.ii.(i)~~.~~ and (ii).

d. Fuel Sampling and Stack Testing.

i. Beginning on May 11, 2001 until August 1, 2002, any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel in a Part 72 unit shall test each shipment of coal at the time received. The test shall be conducted by a method approved by the Department, and report the mercury and chlorine content of the coal. The results of each interim fuel testing shall be reported to the Department with the results of the next stack test as required in 310 CMR 7.29(5)(a)3.d.ii.

ii. Any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel shall perform stack tests for mercury. The stack tests shall:

- Be conducted using a DEP-approved test method detailed in a test protocol submitted to the Department at least 45 days before commencement of testing, and notify the Department of the specific date the test will be conducted at least 30 days prior to conducting the test;
- Test the mercury concentrations and species before all add-on air pollution control equipment (inlet) and after (outlet);
- Be conducted as follows:
  - One test shall be performed before August 1, 2001,
  - A second test shall be performed after December 1, 2001 but not later than February 1, 2002,
  - A third test shall be performed after June 1, 2002 but not later than August 1, 2002
- The results of each stack test shall be reported to the Department within 30 days after conducting each stack test.

iii. Until a certified mercury monitoring system is installed, s~~S~~tack tests for mercury shall consist at a minimum of three runs at full load or a sorbent-trap based test on each unit firing solid fossil fuel or ash according to a testing protocol acceptable to the Department. Stack tests for mercury, and certification and ~~annual~~ Relative Accuracy Test Audits for mercury ~~CEMS~~monitoring systems, shall determine total and particulate-bound mercury. Relative accuracy shall be calculated for vapor-phase mercury. The results of each stack test shall be reported to the Department within 45 days after conducting each stack test.

~~iv. Notwithstanding 310 CMR 7.29 (5)(a)3.d.iii., an affected facility with more than one stack flue may measure a representative stack flue concentration while all units that can supply the flue are at full load.~~

e. Effective on January 1, 2008, or 15 months after the facility's earliest applicable Phase 1 NO_x and SO_2 compliance date under an administrative order existing prior to June 4, 2004, whichever

is later, any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel or ash shall comply with at least one of the following mercury emissions standards:

i. a facility average total mercury removal efficiency of 85% or greater for those units combusting solid fossil fuel or ash. The mercury removal efficiency based on a mercury ~~CEMS~~ monitoring system shall be calculated based on the average historic mercury inlet emissions determined under 310 CMR 7.29(5)(a)3.d.ii. using the methodology approved by the Department in the monitoring plan required under 310 CMR 7.29(5)(a)3.g. and shall be calculated on a rolling 12 month basis; or

ii. a facility average total mercury emissions rate of 0.0075 lbs./GWh or less for those units combusting solid fossil fuel or ash. The mercury emissions rate based on a mercury ~~CEMS~~ monitoring system shall be calculated using the mercury mass emissions methodology specified in 40 CFR Part 75 and approved by the Department in the monitoring plan required under 310 CMR 7.29(5)(a)3.g. and shall be calculated on a rolling 12 month basis.

iii. Notwithstanding 310 CMR 7.29(5)(a)3.e.i. and ii., any person who owns, leases, operates or controls an affected unit which combusts solid fossil fuel or ash and has an enforceable commitment with the Department to terminate operations by January 1, 2010, may comply with 310 CMR 7.29 (5)(a)3.e.i. or ii. through January 1, 2010 by complying with an approved 310 CMR 7.29 emission control plan modification achieving early or off-site reductions. To comply with the foregoing, such person shall propose under 310 CMR 7.29(6)(h)1. to amend the approved emission control plan. Such early or off-site reductions shall be in an amount of at least the equivalent mass of mercury reductions required under 310 CMR 7.29 (5)(a)3.e.i. or ii. Any early reductions shall be accrued on-site at the stack prior to the compliance date effective under 310 CMR 7.29(5)(a)3.e. Any off-site mercury air emission reductions shall be accrued on at least a one pound reduced for one pound credited basis from facilities located in the same DEP Region as the affected unit. Any other off-site mercury reductions shall be accrued on at least a ten pounds reduced for one pound credited basis from facilities located in the same DEP Region as the affected unit.

f. Effective on October 1, 2012, any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel or ash shall comply with at least one of the following mercury emissions standards:

i. a facility average total mercury removal efficiency of 95% or greater for those units combusting solid fossil fuel or ash. The mercury removal efficiency shall be calculated based on a mercury ~~CEMS~~monitoring system as provided in 310 CMR 7.29(5)(a)3.e.i.; or

ii. an average total mercury emission rate of 0.0025 lbs./GWh or less for those units combusting solid fossil fuel or ash. The mercury emission rate shall be calculated based on a mercury ~~CEMS~~monitoring system as provided in 310 CMR 7.29(5)(a)3.e.ii.

g. Mercury ~~Continuous Emissions~~ Monitoring Systems ~~(CEMS)~~

i. By January 1, 2008, any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel or ash shall install, certify, and operate ~~CEMS~~ a mercury monitoring system in accordance with 40 CFR Part 75, 40 CFR 60.49a(p), and 40 CFR 60.4106(b)(1) to measure mercury stack emissions from each solid fossil fuel- or

ash-fired unit at a facility subject to 310 CMR 7.29. Any person required to install a mercury ~~CEMS~~monitoring system shall ~~:~~

~~(i)~~ submit a ~~preliminary CEMS~~ monitoring plan for Department approval and shall propose under 310 CMR 7.29(6)(h)1. to amend the approved emission control plan to incorporate the mercury monitoring approach at least ~~45~~180 days prior to the commencement of initial certification testing.~~equipment installation;~~,

~~(ii) include the following information in the preliminary CEMS monitoring plan~~: ~~source identification, source description, control technology description, the applicable regulations, the type of monitor, a monitoring system flow diagram, a description of the data handling system, and~~

ii. Affected facilities must include in their monitoring plan a proposed methodology ~~to~~sample calculation demonstrat~~eing~~ compliance with the emission ~~limit~~standards in 310 CMR 7.29(5)(a)3.e. and f.~~using conversion factors from 40 CFR Part 60 or Part 75 or other proposed factors;~~

~~(iii) submit for Department approval a CEMS certification protocol at least 90 days prior to certification testing for the CEMS, and any proposed adjustment to the certification testing at least seven days in advance;~~

~~(iv) include the following information in the certification protocol: the location of and specifications for each instrument or device, as well as procedures for calibration, operation, data evaluation and data reporting;~~

~~(v) install, calibrate, maintain and operate a CEMS for measuring mercury at locations approved in the Department's approval of the CEMS certification protocol and record the output of each CEMS;~~

~~(vi) submit a certification report within 60 days of the completion of the certification test for Department approval;~~

~~(vii) certify each CEMS in accordance with the quality assurance and quality control procedures contained in 40 CFR Part 60 Appendix F and continue to comply with the requirements of 40 CFR Part 60 Appendix F;~~

~~(viii) calculate a calendar month average from a block hourly average for each hour the emissions unit is operating and a block hourly average from all valid data points generated by a CEMS;~~

~~(ix) operate each continuous emission monitoring system at all times that the emissions unit(s) is operating except for periods of CEMS calibrations checks, zero span adjustment, and preventive maintenance as described in the monitoring plan approved by the Department and as determined during certification. Notwithstanding such exceptions, in all cases obtain valid data for at least 75% of the hours per day, 75% of the days per month, and 90% of the hours per quarter during which the emission unit is combusting solid fossil fuel or ash;~~

~~(x) use only valid data to calculate mercury emissions using conversion factors and calculations from 40 CFR Part 60 or approved by the Department;~~

~~(vi) maintain a record of all measurements, performance evaluations, calibration checks, and maintenance or adjustments for each continuous emission monitor; and~~

~~(xii) submit to the appropriate Department regional office by the 30th day of April, July, October, and January, a report detailing any of the following that have~~

~~occurred within the previous calendar quarter; in the event none of the following items have occurred, such information shall be stated in the report:~~

~~- the date and time that any mercury CEMS stopped collecting valid data and when it started to collect valid data again, except for zero and span checks and~~

~~- the nature and date of system repairs.~~

iii. If a mercury ~~CEMS~~monitoring system capable of measuring only vapor-phase mercury ~~are~~ is installed at a unit for purposes of determining compliance with the standards in 310 CMR 7.29(5)(a)3.c., e. and f., total mercury shall be determined by taking into account the average particulate-bound mercury measured during the most recent stack test on that unit in combination with the total vapor-phase mercury measured by the ~~CEMS~~mercury monitoring system until such time as a mercury ~~CEMS~~ monitoring system to measure particulate-bound mercury ~~are~~ is installed at a unit.

iv~~ii~~. Notwithstanding 310 CMR 7.29(5)(a)3.g.i., a unit with an enforceable commitment to terminate operations by January 1, 2010 and that qualifies to use the mercury low mass emissions excepted monitoring methodology under 40 CFR 75.81(b) may choose between quarterly stack testing and a mercury ~~CEMS~~monitoring system to document mercury emissions in the period from January 1, 2008 until the time such unit terminates operation or January 1, 2010, whichever is earlier; however, if such a unit must install a mercury ~~CEMS~~monitoring system to meet a federal requirement, data from that mercury ~~CEMS~~monitoring system shall be used to document mercury emissions instead of stack testing.

7.29(5)(b) Compliance with the emission standards in 310 CMR 7.29(5)(a), may be demonstrated by any combination of the following:

1. Dividing the total emissions of each pollutant by the total net electrical output from all electric generating units subject to 40 CFR Part 72 located at the affected facility as of May 11, 2001 ~~of~~ or repowered at the affected facility after May 11, 2001. For demonstrating compliance with the mercury emissions standards in 310 CMR 7.29(5)(a)3., the person who owns, leases, operates or controls an affected facility shall include in the calculation only units that fire solid fossil fuel or ash, or that repowered a unit that fired solid fossil fuel or ash.

7.29(6)(a) Emission Control Plan Deadline and General Provisions.

3. Any person who owns, leases, operates, or controls an affected facility which installs mercury control equipment that is not already contained in an emission control plan approval under 310 CMR 7.29 shall submit a mercury emissions control plan amendment application under 310 CMR 7.29(6)(h) at least 90 days before intended installation and may not install such equipment until receiving approval of the revision.

4. Any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel shall by December 4, 2004, propose under 310 CMR 7.29(6)(h)1. to amend the approved emission control plan to incorporate the mercury emission cap established in 310 CMR 7.29(5)(a)3.c. Notwithstanding 310 CMR 7.29(5)(a)3.c., any facility with average annual emissions of less than 5 pounds, calculated using the results of the stack tests required in 310 CMR 7.29(5)(a)3.d.ii., may propose and be approved to use early or off-site reductions to demonstrate compliance with 310 CMR 7.29(5)(a)3.c. through September 30, 2012. Any early reductions shall be accrued on-site at the stack prior to the compliance date effective under 310

CMR 7.29(5)(a)3.c. Any off-site mercury air emission reductions shall be accrued on at least a one pound reduced for one pound credited basis from facilities located in the same DEP Region as the affected unit. Any other off-site mercury reductions shall be accrued on at least a ten pounds reduced for one pound credited basis from facilities located in the same DEP Region as the affected unit.

7.29(6)(h) Modifications to an Affected Facility's Emission Control Plan.
1. Any person subject to 310 CMR 7.29 may propose amendments to the approved emission control plan. If the Department proposes to approve such amendments, or approve such amendments with conditions, then the Department will publish a notice of public comment on the draft approval, in accordance with M.G.L. c. 30A. The Department will allow a 30 day public comment period following publication of the notice, and may hold a public hearing. Modifications to an affected facility's monitoring system approved pursuant to the requirements of 40 CFR Part 72 are not subject to such public comment prior to approval.
2. For the purposes of evaluating system performance, testing new technology or control technologies, diagnostic testing, or other related activities that are anticipated to reduce air pollution or advance the state-of-the-art technology for controlling facility mercury emissions, the Department may issue an ECP approval in the form of a limited amendment to the ECP for a limited period of time for the purpose of achieving compliance with the requirements of 310 CMR 7.29(5)(a)3.e. and f. The Department approval will detail the duration of the time period and how the facility shall report under 310 CMR 7.29(7)(b) for the duration of the time period. The Department will publish a notice of public comment on the draft approval. The Department will allow a ten day public comment period following publication of the notice, and may hold a public hearing.

7.29(7) Reporting, Compliance Certification, and Record Keeping.
(a) By January 30 of the year following the earliest applicable compliance date for the affected facility under 310 CMR 7.29(6)(c), and January 30 of each calendar year thereafter, the company representative responsible for compliance at each affected facility shall submit a report to the Department demonstrating compliance with the emission standards contained in 310 CMR 7.29(5)(a) and in an approved emission control plan. The report shall demonstrate compliance with any applicable monthly emission rate for each month of the previous calendar year, and with any applicable 12-month emission rate for each of the 12 previous consecutive 12-month periods. For the mercury standards at 310 CMR 7.29(5)(a)3.c., the compliance reports due January 30, 2007 and 2008 shall include the quarterly emissions for each quarter beginning October 1, 2006. For the mercury standards at 310 CMR 7.29(5)(a)3.c., e., and f., the compliance report due January 30, 2009 and each report thereafter shall demonstrate compliance with any applicable annual standard for the previous calendar year and with any applicable 12-month standard for each of the 12 previous consecutive 12-month periods.
(b) The compliance report shall contain the following:

1. Actual emissions for each pollutant, expressed in tons for SO_2, CO_2, and NO_x, for each of the preceding 12 months and expressed in ~~tenths~~ thousandths of ~~pounds~~ounces for mercury, for each of the preceding four calendar quarters beginning October 1, 2006 and preceding 12 months beginning January 1, 2008. Actual emissions shall be provided for individual units and as a facility total for all units included in the calculation

demonstrating compliance. Actual emissions provided under 310 CMR 7.29 shall be reported in accordance with:

a. 40 CFR Part 75 for SO_2, CO_2, and NO_x, and, beginning January 1, 2009, for mercury,

b. for the standards at 310 CMR 7.29(5)(a)3.c.i. based on stack tests, by calculating the ~~tenths~~ thousandths of ~~pounds~~ounces of mercury from:

i. the average measured pounds of mercury emitted per million Btu consumed for the calendar year multiplied by

ii. the heat input determined under 40 CFR Part 75 for the calendar year. Affected facilities may choose to subtract the heat input attributable to combustion of fuels other than solid-fossil fuel and ash if such heat input is determined using the procedures of 40 CFR Part 75 Appendix D.

c. for the standards at 310 CMR 7.29(5)(a)3.c.ii., by assuming all of the mercury in the utilized ash is emitted, unless a lesser amount of mercury has been approved under 310 CMR 7.29(5)(a)3.c.ii.(iv~~IV~~).

d. for the standards at 310 CMR 7.29(5)(a)3.c.i., e.ii., and f.ii. based on a mercury ~~CEMS~~monitoring system, from a mercury ~~CEMS~~ monitoring system meeting quality assurance procedures detailed in 40 CFR Part 75~~60 Appendix F Procedure 1~~ , 40 CFR 60.51a(g) and (k), 40 CFR 60.4106(b)(1) ~~and~~/or, for the standards at 310 CMR 7.29(5)(a)3.e.ii., and f.ii., ~~performance specifications, test procedures and~~ calculations approved by the Department in the monitoring plan required under 310 CMR 7.29(5)(a)3.g. Any particulate-bound mercury accounted for under the provisions of 310 CMR 7.29(5)(a)3.g.ii. shall be calculated from:

i. the most recent average measured pounds of particulate mercury emitted per million Btu consumed multiplied by

ii. the heat input determined under 40 CFR Part 75 for each calendar month. Affected facilities may choose to subtract the heat input attributable to combustion of fuels other than solid-fossil fuel and ash if such heat input is determined using the procedures of 40 CFR Part 75 Appendix D.

2. Actual net electrical output for each of the preceding 12 months, expressed in megawatt-hours. Actual net electrical output shall be provided for individual units and as a facility total for all units included in the calculation demonstrating compliance.

3. The resulting output-based emission rates for each of the preceding 12 months, and each of the 12 consecutive rolling month time periods, expressed in pounds per megawatt-hour for SO_2, CO_2, and NO_x and pounds per gigawatt-hour for mercury. Output-based emission rates shall be provided for individual units and as a facility total for all units included in the calculation demonstrating compliance.

4. A compliance certification report, which shall contain the following elements:

a. A statement certifying that the monitoring data reflects operations at the affected facility.

b. A statement that all SO_2, CO_2, and NO_x emissions, and, beginning January 1, 2009, all mercury emissions, from the affected facility were accounted for, either through the applicable monitoring or through application of the appropriate missing data procedures and reported in the quarterly reports. If provisionally

certified data were reported, the company representative responsible for compliance with 310 CMR 7.29 shall indicate whether the status of all provisionally certified data was resolved and all necessary quarterly reports were submitted.

(c) The Department may verify compliance by whatever means necessary, including but not limited to:

1. Inspection of a unit's operating records;
2. Requiring the person who owns, leases, operates or controls an affected facility to submit information on actual electrical output of company generating units provided to that person by the New England Independent System Operator;
3. Testing emission monitoring devices; and,
4. Requiring the person who owns, leases, operates or controls an affected facility to conduct emissions testing under the supervision of the Department.

(d) Any person who owns, leases, operates or controls an affected facility shall keep all measurements, data, reports and other information required by 310 CMR 7.29 for five years, or any other period consistent with the affected facility's operating permit.

(e) For units that apply carbon or other sorbent injection for mercury control, the following records shall be kept until such time as a mercury ~~CEMS~~monitoring system ~~are~~ is installed at that unit:

1. The average carbon or other sorbent mass feed rate (in lbs/hr) estimated during the initial mercury optimization test and all subsequent mercury emissions tests, with supporting calculations.
2. The average carbon or other sorbent mass feed rate (in lbs/hr) estimated for each hour of operation, with supporting calculations.
3. The total carbon or other sorbent usage for each calendar quarter, with supporting calculations.
4. The carbon or other sorbent injection system operating parameter data for the parameter(s) that are the primary indicator(s) of carbon or other sorbent feed rate.
5. Identification of the calendar dates when the average carbon or other sorbent mass feed rate recorded under 310 CMR 7.29(7)(e)2. was less than the hourly carbon feed rate estimated during and recorded under 310 CMR 7.29(7)(e)1., with reasons for such feed rates and a description of corrective actions taken.
6. Identification of the calendar dates when the carbon injection or other sorbent system operating parameter(s) that are the primary indicator(s) of carbon or other sorbent mass feed rate recorded under 310 CMR 7.29(7)(e)4. are below the level(s) estimated during the optimization tests for mercury with reasons for such occurrences and a description of corrective actions taken.

(f) For units that apply technology other than carbon or other sorbent for mercury control, the operating parameter records to be kept until such time as a mercury ~~CEMS~~monitoring system ~~are~~ is installed at that unit shall be proposed to the Department in the emission control plan application required under 310 CMR 7.29(6)(a)3.

(g) Any person subject to 310 CMR 7.29(5)(a)3. shall submit the results of all mercury emissions, monitor, and optimization test reports, along with supporting calculations, to the Department within 45 days after completion of such testing.